International Journal of Nursing Studies Advances 6 (2024) 100184

Contents lists available at ScienceDirect

International Journal of Nursing Studies Advances

journal homepage: www.sciencedirect.com/journal/international-journal-of-nursing-studies-advances

Evaluation of the effectiveness of a Strengths-Based Nursing and Healthcare Leadership program aimed at building leadership capacity: A concurrent mixed-methods study

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ARTICLE INFO

What this paper adds

Keywords:
Strengths-Based Nursing and Healthcare
Leadership capacity
Nurse managers
Nurse leaders
Healthcare leaders
concurrent mixed-methods

ABSTRACT

Background: Targeted interventions have been found effective for developing leadership practices in nurses. However, to date, no leadership training program based on the Strengths-Based Nursing and Healthcare Leadership approach exists.
Objectives: Demonstrate the effectiveness of a Strengths-Based Nursing and Healthcare Leadership 6-month program designed for nurse and healthcare leaders on leadership capacity and psychological outcomes.
Design: Concurrent mixed-methods with nurse and healthcare leaders from five healthcare organisations in Quebec and Ontario (Canada).
Settings: Participants were recruited from five Canadian health care organizations: two in Toronto (Ontario) and three in Montreal (Quebec).
Participants: A total of 50 nurse leaders and healthcare leaders were included in the quantitative component, and 22 (20 nurse leaders and two healthcare leaders) participated in the qualitative individual interviews.
Methods: Quantitative and qualitative (interviews) methods were used. Quantitative data (pre-post surveys) were collected from the participants before their participation in the program (Time 0), as well as after the completion of the program (Time 1). Qualitative data (individual interviews) were collected from participants at the end of the program (Time 1). Analysis was conducted using descriptive statistics, paired-sample *t*-tests, and thematic analysis.
Results: Quantitative results suggest a significant improvement in terms of leadership capabilities, work satisfaction, and reduction in perceived stress among participants. Three themes emerged

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https://doi.org/10.1016/j.ijnsa.2024.100184
Received 6 October 2023; Received in revised form 1 February 2024; Accepted 4 February 2024
Available online 6 February 2024

from the qualitative data analysis: 1) focus on people's strengths, 2) structure and language based on Strengths-Based Nursing and Healthcare values, and 3) building support networks.
Conclusions: The Strengths-Based Nursing and Healthcare Leadership program developed to build the leadership capabilities of nurse and healthcare leaders was found to be effective. The positive impact of the 6-month program was demonstrated. It was also shown that the leadership program can help improve the leadership competencies, well-being, and work satisfaction of participating nurses and healthcare leaders.
Implication: This study reinforces the importance of working with educational, research, and healthcare organizations to establish leadership development programs and mentorship opportunities. Future leadership training should use a Strengths-Based Nursing and Healthcare Leadership lens when tackling leadership and stress in the workplace.

What is already known about this topic

- Nurse leaders are central to mobilizing their clinical teams.
- Targeted interventions have been found to be effective in developing leadership practices in nurses.
- The Strengths-Based Nursing and Healthcare Leadership approach guides the person and the organisation to uncover and develop strengths to promote leadership.

What this paper adds

- A Strengths-Based Nursing and Healthcare Leadership program designed for nurse and healthcare leaders was shown to improve the Strengths-Based Nursing and Healthcare Leadership capacity, leadership, and satisfaction at work and to reduce stress.
- From this pre-post intervention program, we suggest that future leadership training should adopt a Strengths-Based Nursing and Healthcare Leadership lens to tackle both leadership and stress in the workplace.

1. Introduction

Nurse and healthcare leaders are essential players in the overall ability of a healthcare organisation to reach its objectives (Brousseau, 2019). Nurse leaders, and especially front-line nurse leaders, occupy a role that is very complex and often difficult to fully embody (Pilat et Merriam, 2019). Nurse leaders are central to the mobilisation of their nursing teams (Pilat and Merriam, 2019), to the availability and accessibility of quality care (Brousseau, 2019), and to the functioning of their units (Shuman et al., 2018). The challenges for nurse and other healthcare leaders were heightened in the pandemic context where leaders were called upon to support and rebuild care teams (Berlin et al., 2021; Chen et al., 2021). However, nurse leaders are rarely well-prepared for this role. They are often selected based on their clinical skills and have limited managerial competencies (Warshawsky and Cramer, 2019).

The leadership style of nurse leaders has a significant impact on their teams (Manning, 2016), as well as on patients (Wong, 2015). For instance, Lavoie-Tremblay et al. (2016) reported that nurse managers exhibiting more transformational leadership practices, as opposed to abusive leadership practices, led novice nurses to provide high-quality care and, importantly, to have lower intentions to quit both their current healthcare organisation and the nursing profession. In a recent systematic review, researchers found that nurse leaders' leadership style had a significant direct, as well as indirect, impact on the well-being and burnout levels of the nurses who worked for them (Niinihuhta et al., 2022). Specifically, they reported that relationally-focused leadership styles, such as transformational (i.e., a leader who creates, supports, and empowers the leader-follower partnerships for a common vision [e.g., Carless et al., 2000]), authentic (i.e., a leader who demonstrates self-awareness, unbiased processing, authentic behavior/acting, and authentic relational orientation [Ilies et al., 2005]), and servant (i.e., a leader who prioritizes serving followers first [Liden et al., 2015]) leadership, were conducive to nurses' work-related well-being, while destructive leadership styles, such as dissonant and management-by-exception styles, were detrimental to nurses' well-being.

Yukl (2006, p. 8) defined leadership as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives." It is thus important to develop the leadership competencies of nurse and healthcare leaders. Researchers in a 2017 systematic review identified a list of 18 factors that contributed to the managerial competencies of nurse leaders (Gunawan et al., 2018). They further categorized these 18 factors into three distinct, yet interrelated, themes: organizational factors (e.g., coaching/mentoring, training and development, human resource management), characteristics and personality traits of the individual nurse leader (e.g., education, age, gender, managerial experience), and factors related to their role (e.g., role preparation, work complexity, job demand). Some of these factors can be targeted in interventions to improve leaders' leadership managerial competencies.

Several leadership interventions for nurse leaders have been developed in the past 20 years. Two recent reviews of existing leadership interventions have been published (Chen et al., 2022; Cummings et al., 2021), and both have shown generally positive outcomes of the interventions. Chen et al. (2022) further highlighted that most programs were delivered in-person or through group work and that, in recent years, intervention programs have often incorporated more than one element in combination with in-person lectures or seminars, such as coaching and mentoring. However, workload, understaffing, and time were highlighted as significant barriers to the implementation of newly-acquired leadership competencies (Chen et al., 2022).

1.1. Strengths-Based Nursing and Healthcare Leadership program

Strengths-Based Nursing and Healthcare is as much a philosophy as a value-driven approach to care. The central aim of Strengths-Based Nursing and Healthcare is to guide the person and the organisation in uncovering and developing strengths that will support optimal functioning, promote health, and facilitate healing (Gottlieb, 2013; Gottlieb et al., 2012, 2021). The Strengths-Based Nursing and Healthcare approach has been successfully implemented in several settings, including with nurse preceptors (Arnaert et al., 2022), early childhood nurses (Thentz et al., 2022), and oncology nurses (Loiselle, 2023).

Strengths-Based Nursing and Healthcare Leadership is derived from Strengths-Based Nursing and Healthcare and is a unique, value-driven approach that guides leaders and managers in creating equitable and culturally-safe workplace and environments that honour, develop, mobilize, and capitalize on the strengths of individuals and their teams. Strengths-Based Nursing and Healthcare leaders enable individuals, teams, and organizations to provide knowledgeable, compassionate, safe, high-quality person- and family-centered care (Gottlied, Gottlied, Bitzas, 2021; Gottlieb et al., 2021). Strengths-Based Nursing and Healthcare leaders have skills to bring about change. The Strengths-Based Nursing and Healthcare Leadership's underlying foundations of person-centered, empowerment, relationship-focused, and innate capacities are operationalized by eight core values. These values guide the actions of Strengths-Based Nursing and Healthcare leaders. They include systems-thinking: uniqueness, health and healing, multiple perspectives and creating meaning, self-determination, goodness-of-fit, timing-readiness-learning, and collaborative partnerships (Gottlieb et al., 2021). Strengths-Based Nursing and Healthcare leaders strive to be humble, self-aware, authentic, open-minded, compassionate, courageous, credible, curious, creative, flexible, and resourceful. They have integrity and imagination and operate from a growth mindset. They strive to be engaged, collaborative, systems-focused, solution-orientated, and evidenced-informed. These Strengths-Based Nursing and Healthcare leadership qualities determine how the foundations and the eight core values are enacted by the leader (Gottlieb et al., 2021). The Strengths-Based Nursing and Healthcare Leadership approach is a unique one based on values that emerged from nursing practice and is aimed at transforming work cultures.

Targeted interventions have been found effective for developing leadership practices in nurses (Chen et al., 2022), particularly interventions that were developed based on established theoretical frameworks and considered organizational context in their implementation (Cummings et al., 2021). However, to date, no leadership training program based on this approach exists. Unlike other strengths-based leadership programs with their focus on identifying specific strengths required for specific roles or to achieve specific goals, Strengths-Based Nursing and Healthcare goes far beyond. Strengths-Based Nursing and Healthcare is a philosophy, an embodied way of being, thinking and doing. It is not something that is applied, but a way one practices. As a philosophy, it provides the orientation and direction for encountering and acting in the world, guided by the foundations and values that are integral to one's identity and behaviour (Gottlieb et al., 2021). Nurse and healthcare leaders play a central role in the creation of a strengths-based culture by ensuring that they embody strengths-based ideals in their attitudes, behaviors, and decisions. This begins with training the nurse and healthcare leaders directly responsible for supervising point-of-care nurses and staff in Strengths-Based Nursing and Healthcare Leadership.

Thus, the Strengths-Based Nursing and Healthcare Leadership Program was developed by members of the study's Integrated

Table 1
Strengths-Based Nursing and Healthcare Leadership program modules (Gottlieb et al., 2023).

Segment 1: Laying the foundations. Why use a Strengths-Based approach?
This segment helps program participants understand a Strengths-Based approach to care and why it is important for patient and family outcomes. As a leader, they will also examine their leadership potential and learn how to build capacity as a leader in healthcare, creating SBNH environments that support people and teams to grow, flourish, and thrive.
Module 1 Introduction to Strengths-Based Nursing & Health Care (SBNH)
Module 2 SBNH Leadership
Module 3 Situating SBNH Leadership within the Health Care System
Module 4 Building SBNH Leadership Credibility and Creating Conditions for SBNH Practice Environments
Segment 2: Skilled know-how to foster creative SBNH Leadership
This segment helps program participants build their capabilities as a change leader. All managers and leaders require an understanding and an ability to: communicate effectively and resolve conflict; foster equitable workplace environments; and innovate and improve the quality of care delivered to patients and their families. Applying wise practices and using tools from communication theory, change management, quality improvement, and implementation science can facilitate a creative resolution to challenging problems faced in an uncertain and high-pressured environment. Effective SBNH Leaders use multiple strategies to implement and sustain change.
Module 5 Effective communication
Module 6 Leading change
Module 7 Continuous Quality Improvement
Module 8 Implementation Science
Segment 3: Putting it all together to be the SBNH Leader you want to be
All leaders take time to develop their style, capabilities and build confidence. Practical knowledge (i.e., experience) and theoretical knowledge coupled with reflective and experiential learning can help program participants become the leader they want to be. This segment will help them explore leadership ideas that are unique to their role and discover strategies that are relevant to their leadership challenges.
Module 9 Professionalism & Collaborative Partnerships
Module 10 What Constitutes a Healthy Workplace Environment
Module 11 Equity, Diversity and Inclusion in a Workplace
Module 12 Capstone Change Project Presentations

Note. SBNH: Strength-Based Nursing and Healthcare, SBNH-L: Strength-Based Nursing and Healthcare Leadership.

Training Program Committee for virtual delivery. Members included the original developer of Strengths-Based Nursing and Healthcare, as well as leaders, educators, and researchers committed to this approach. First, the program developers generated the unique definition of Strengths-Based Nursing and Healthcare Leadership. In subsequent stages of program development, committee members 1) developed the ways of being and doing for Strengths-Based Nursing and Healthcare leaders, 2) refined the program outcomes, 3) generated Strengths-Based Nursing and Healthcare Leadership grounded materials to support the mentorship component, and 4) conducted a curriculum mapping exercise to ensure that the Strengths-Based Nursing and Healthcare Leadership approach framed the program as a whole and that individual training modules built on its concepts and capabilities. The final leadership program consisted of a 12-module training course to develop foundational knowledge and capabilities, and a 6-month small group mentorship component to support participants in integrating this approach into their leadership identity and in integrating their new knowledge and skills into the workplace (See Table 1).

1.2. Study aims

We aimed to evaluate the effectiveness of a Strengths-Based Nursing and Healthcare Leadership program that sought to build leadership capacities among nurses and healthcare leaders. Specifically, the leadership program sought to help nurse managers and healthcare leaders acquire the knowledge and skills required to create equitable, culturally-safe workplace and environments that honour, develop, mobilize, and capitalize on the strengths of the individuals and their teams. Furthermore, although the psychological health of nurses and healthcare leaders has been studied at length recently (e.g., Boyden and Brisbois, 2023; Chemali et al., 2022; Hult and Terkamo-Moisio, 2023), very few studies have tried to link leadership interventions with these leaders' own psychological outcomes, such as stress and work satisfaction. For this reason, we evaluated not only the longitudinal impact on participants' leadership competencies but also their psychological work-related outcomes. Finally, there are few studies using a mixed-methods design combining quantitative and qualitative methods to evaluate leadership programs among nurses (Cummings et al., 2021). Therefore, a qualitative phase was included. A mixed-methods design is especially important for the development and implementation of an intervention, as it facilitates a better understanding of the tangible and practical impacts of the program. Furthermore, the qualitative component gives a better access to participants' lived experiences and a better understanding of the facilitators and barriers to the program. Thus, a mixed-method design gives helps evaluate the effectiveness of an intervention as well as to give answers regarding why it worked and for whom it worked (Adatho, 2011).

2. Methods

2.1. Study design

A concurrent mixed-methods design was used. All participants of the Strengths-Based Nursing and Healthcare Leadership Program ($N = 121$) were invited to participate. The program was offered to two distinct cohorts; the first cohort participated between September 2021 and March 2022, while the second cohort participated between May and October 2022 (see Table 2). The concurrent mixed-methods design (Creswell, 2014) was utilized, including: (1) a pre (Time 0) and post (Time 1) survey to evaluate the effectiveness of a leadership program on participants' leadership capacity and psychological outcomes (quantitative method); and (2) individual interviews at Time 1 (qualitative method) with a purposive sub-sample of participants from the leadership Program to describe the experience of the participants regarding the effectiveness of a leadership program.

Table 2
Strengths-Based Nursing and Healthcare Leadership program timeline.

	Time	Training modules	Mentorship
Cohort 1	Time 0 survey:	Modules 1 & 2 : Sept 30, 2021	First mentorship session held the week of October 4, 2021
***n* = 55**	Early Sept 2021	Modules 3 & 4 : Oct 1, 2021	Mentors meet small groups of mentees every 2 weeks for a total of 12 1-hour sessions.
	n = 46	Modules 5 & 6 : Oct 21, 2021	
	Time 1 survey and individual interviews:	Modules 7 & 8 : Oct 22, 2021	Mentorship ends week of March 7, 2022
		Modules 9 & 10 : Dec 2, 2021	
	March 2022	Modules 11 & 12 : Dec 3, 2021	
	• *n* = 31		
Cohort 2	Time 0 survey:	Modules 1 & 2 : May 12, 2022	First mentorship session held the week of May 16, 2022
***n* = 66**	Early May 2022	Modules 3& 4 : May 19, 2022	Mentors meet small groups of mentees every 2 weeks for a total of 12 1-hour sessions.
	• *n* = 63	Modules 5 & 6 : May 26, 2022	
	Time 1 survey and individual interviews:	Modules 7 & 8 : June 2, 2022	Mentorship ends week of October 17, 2022
		Modules 9 & 10 : June 9, 2022	
	November 2022	Modules 11 & 12 : June 16, 2022	
	• *n* = 36		

n: sample size.

2.2. Participants

Participants were recruited from five Canadian health care organizations: two in Toronto (Ontario) and three in Montreal (Quebec). The participating organizations varied significantly in size and specialty, including two integrated university health and social services centres providing a range of health services, one academic health network providing tertiary and quaternary care, one children's hospital providing acute care, and one children's rehabilitation hospital. The nursing workforces at the participating institutions ranged from a staff of 250 persons up to a staff of 3500 persons. Despite these organizational differences, all had previously established a commitment to the Strengths-Based Nursing and Healthcare approach and secured institutional approval to participate in this study to train nurse and healthcare leaders in this approach. Participants were recruited amongst nurse managers, nurse leaders, nurse educators, nurses, other healthcare leaders/managers, and those in advanced practice roles. Most of the participants were nurse leaders (113 out of 121). Each participating institution was responsible for conducting its own participant recruitment and selection and could send a total of up to 25 staff members to attend the leadership program (12–13 per cohort, two cohorts). Across the five participating institutions, 55 participants attended the first cohort of the leadership program, and 66 participants attended the second cohort, for a total of 121 participants. All participants received 6 days of paid release time to attend the training components. Participant inclusion criteria were: 1) attending all training modules, all days 2) participating in the full 6 months of the mentorship component, and 3) being a nurse manager, nurse educator, nurse director, nurse, other healthcare leader/managers, or being in an advanced practice role and wishing to learn about the impact a Strengths-Based Nursing and Healthcare Leadership approach can have in patient care, team dynamics, and leadership competencies. A priori power analysis estimates for paired sample *t*-tests at a 5 % significance level and 80 % power suggested that a total sample of 45 participants would be necessary to detect a medium effect size (estimated using G*Power 3.1.9.4, Faul et al., 2007).

2.3. Study intervention

Given the COVID-19 pandemic, the leadership program was transitioned to an online intervention, combining asynchronous and synchronous delivery methods.

The leadership program was an online, 6-month intervention grounded in Strengths-Based Nursing and Healthcare Leadership concepts, principles, and values that aimed to assist participants in acquiring an identity and mindset that would become their leadership style (Gottlieb et al., 2023). Throughout this program, participants learned leadership skills and strategic approaches required of Strengths-Based Nursing and Healthcare leaders that promote effective and resilient teams, which in turn optimize system performance. This could be accomplished through embodying a Strengths-Based Nursing and Healthcare Leadership identity and mindset grounded in the essential qualities required for this style of leadership.

The leadership program was conceptualised with a training component and a 6-month mentorship component. The training consisted of 12 online modules delivered over 6 days (Gottlieb et al., 2023). Each module included 1 hour of asynchronous (independent online) pre-learning (suggested readings/resources for participants to review), plus a 3-hour synchronous session with the participant's cohort and faculty over Zoom (see Table 1). The training modules integrated a story-sharing facilitation style along with art-based active learning activities that were used to facilitate reflection and discussion, to deepen learning, and to transform thinking and actions. Finally, the program contained a 6-month small-group mentorship component to support participants in deepening their understanding of Strengths-Based Nursing and Healthcare Leadership and in integrating their learnings into the workplace. Mentors were recruited for the leadership program from each of the five participating clinical sites as well as one university. Mentors were recruited based on their knowledge and experience with the Strengths-Based Nursing and Healthcare approach and their leadership experience. Out of 31 mentors, 13 were also program facilitators for one of the 12 modules and 3 of those were clinical collaborators on the research team. No mentors were involved in the data collection or analysis. To reduce the chance of prior relationships, biases, or breach of confidentiality between mentors and participants, the research team prioritized pairing mentors with participants from different institutions during the pairing process. Mentorship began after the first week of training. Participants met with their mentor and a small group of two -to -three program participants virtually for 1 hour every 2 weeks. A growth mindset is at the heart of this mentoring relationship, encouraging people to grow, learn, develop, and thrive with a focus on exploring possibilities and creating opportunities (Dweck, 2016; Gottlieb et al., 2016). The mentor stimulates a growth mindset in others by encouraging them to see situations as challenges, question assumptions, and assist them to seek learning opportunities in order to cultivate their abilities and deepen their knowledge and develop their strengths (Dweck, 2016; Hubley et al., 2020; Fréchette et al., 2022). The mentee is best understood in the context of their own workplace environments and their relationships (Gottlieb et al., 2016). The program culminated in a final celebration event (Gottlieb et al., 2023).

Cohort 1 included 6 training days delivered in three segments of 2 consecutive days each, with a 3-week gap between Segments 1 & 2 and a 6-week gap between Segments 2 & 3 (September - December 2021). Prior the beginning of Cohort 2, the team consulted with participants, faculty, and co-investigators at the participating institutions regarding the program schedule. Two changes were made to the training component timeline. The two consecutive training days per segment were restructured to run 1 day per week to address Zoom-fatigue concerns raised by participants and faculty, as well as participant work release concerns raised by co-investigators. In addition, because recruitment for Cohort 2 had originally been scheduled to launch at the height of COVID-19's Omicron wave in Ontario and Quebec, the partners reached a collective decision to delay recruitment and program launch by 6 weeks and to condense the program's training component to a weekly schedule (May - June 2022), so that it would not coincide with the summer vacation period when it would be difficult to secure release time for participants. All other elements of the program timeline remained unchanged. Table 2 presents the details of each cohort's timelines.

2.4. Outcome measures

2.4.1. Strengths-Based Nursing and Healthcare Leadership short scale

Participants completed the short Strengths-Based Nursing and Healthcare Leadership scale (Frechette et al., 2021), which is composed of eight items assessing eight dimensions, reflecting the eight values of Strengths-Based Nursing and Healthcare Leadership: systems thinking, uniqueness, health and healing, multiple perspectives and creating meaning, self-determination, goodness-of-fit, timing, readiness and learning, and collaborative partnership. Items are scored on a 6-point scale ranging from 1 (Never) to 6 (Very frequently). Sample items are "I encourage the team to test out new solutions that open up possibilities for problem solving" and "I pay attention to how team members' capacities fit with workplace demands". The Cronbach's alpha in the original validation study was 0.965, and in this study, they were 0.913 at Time 0 and 0.925 at Time 1.

2.4.2. Leadership self-efficacy (Quigley, 2013)

Participants completed the five items of the leadership self-efficacy scale. Items are scored on a scale from 1 (Strongly disagree) to 5 (Strongly agree). Sample items are "Steer my team in a successful direction" and "Get my team to develop viable strategies". The original publication of this measure reported adequate internal consistency indices with Cronbach's alphas between 0.86 and 0.91. The alphas in the present study were 0.841 at Time 0 and 0.874 at Time 1.

2.4.3. Leadership capability

Participants completed the 27 items of the leadership capability instrument (Carless et al., 2000; Coates et al., 2008). This instrument assesses participants' intrapersonal, interpersonal, professional, and transformational leadership. Items are scored on a 5-point scale ranging from 1 (Very poor) to 5 (Excellent). Sample items are: *Indicate how you rate your ability in* "understanding your personal strengths and limitations" and "Motivating others to achieve positive outcomes". The measure presented adequate reliability in the sample (Time 0: Cronbach's alpha = 0.926; Time 1: Cronbach's alpha = 0.917).

2.4.4. Work satisfaction

Participants completed the four items of the global measure of work satisfaction (Laschinger et al., 2001, 2004). Items are scored on a 5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Sample items are "I feel very satisfied with my job" and "I feel that my co-workers are satisfied with their jobs". The measure presented adequate reliability in the sample (Time 0: Cronbach's alpha = 0.825; Time 1: Cronbach's alpha = 0.755).

2.4.5. Perceived stress

Participants completed the 10 items of the perceived stress scale (Cohen et al., 1983; Cohen and Williamson, 1988). Items are scored on a 5-point scale ranging from 0 (Never) to 4 (Very often). Sample items are: "In the last month, how often have you felt that you were unable to control the important things in your life?" and "In the last month, how often have you felt nervous and "stressed"?" The measure presented adequate reliability in the sample (Time 0: Cronbach's alpha = 881; Time 1: Cronbach's alpha = 0.868).

2.5. Data collection procedure and data analysis

2.5.1. Quantitative

Data were collected via Qualtrics. Participants received an invitation to participate by email with a link to the consent form and survey before the beginning of the program (Time 0) and at the end of the 6-month program (Time 1). To ensure that responses and identities remained anonymous, participants created and entered an identification number in the spaces provided using instructions. This identification number was used only to match their responses on each survey. The survey includes validated tools, as well as a number of socio-demographic questions. Analyses were conducted using IBM SPSS version 21 (2013). For the present study, only the survey answers from the participants that could be paired at Time 0 and Time 1 were used. Descriptive statistics (mean scores, standard deviations) followed by paired-sample *t*-tests were conducted to detect significant longitudinal changes in the study variables.

2.5.2. Qualitative

Individual, semi-structured interviews were conducted with the participants at the end of the 6-month program (Time 1). Participants were invited by email. Participants were interviewed individually by Zoom between February and March 2022 (Cohort 1) and between October and November 2022 (Cohort 2). Interviews lasted between 30 and 45 min. A semi-structured interview guide with open-ended questions and probes was developed to elicit participants' responses. To reduce researcher bias, careful consideration was given to the interview guide to avoid leading questions as well as to reduce confirmation bias, question-order bias, and wording bias. Audio recordings were transcribed verbatim. The qualitative data analysis of the interviews was undertaken by two authors (first and fifth author) with expertise in qualitative analysis. The data generated by the interviews (transcripts) were analyzed using a method of thematic content analysis developed by Miles et al. (2019). This method of qualitative data analysis consists of three concurrent streams of activities: condensing the data, data display, and elaboration and verification of the data (Miles et al., 2019). Descriptive statistics, such as means, standard-deviations, ranges, normality, and proportions, were generated through Excel to describe the participants. We used an integrated data display to visually present both qualitative and quantitative data at Time 1 (Miles et al., 2019) and define key themes embodied in the analysis and to illustrate how the themes were interrelated. Peer debriefing was done through regular meetings among the authors (first, second, and fifth author). Dependability was established by ensuring that a sub-set of the

data from the transcripts (open-ended questions) was independently coded by two authors (first and fifth author) and then compared (Lincoln and Guba, 1985). In addition, a code-recode procedure was done during data analysis to ensure the stability of the findings over time (Lincoln and Guba, 1985). A decision trail monitored all methodological decisions made throughout the study process. These include monthly meeting summaries, emails, all previous versions of the study documents, and any materials related to codes, themes, and categories derived from the data. To establish the data's transferability to other research, a description of participants is provided.

2.6. Ethical considerations

Permission to conduct this research was granted through the participating organizations' Research Ethics Boards (SMHC-19–20 and ID 0428**)**. Informed consent was included as the first page of the survey, and consent was implied through survey completion. Interview participants provided written consent prior to data collection. Participants were made aware that only aggregated data would be presented during dissemination. All procedures were performed in compliance with relevant laws and institutional guidelines.

3. Results

3.1. Attrition, adherence, and characteristics of the final sample

Ultimately, the 6-month online leadership program was delivered to a first cohort of 55 participants from September 2021 to March 2022 and to a second cohort of 66 participants from May to October 2022 (see Table 2). Before the beginning of the program (at Time 0), 46 participants from Cohort 1 (83.6 %) and 63 participants from Cohort 2 (95.5 %) completed the quantitative questionnaire. At the end of the 6-month program, which included the training modules and the mentorship (Time 1), 31 participants from Cohort 1 (56.4 %) and 36 participants from Cohort 2 (54.5 %) completed the quantitative questionnaire. Participants for whom Time 0 and Time 1's questionnaires could be matched were included in the quantitative analysis. The final sample was thus composed of 50 nurse and healthcare leaders, 24 from Cohort 1 (43.6 % of Cohort 1′s participants) and 26 from Cohort 2 (39.4 % of Cohort 2′s participants) (see Fig. 1).

3.2. Final sample

Table 3 details the socio-demographic characteristics of the quantitative and qualitative samples. The final quantitative sample was composed of 50 nurse and healthcare leaders, while in the qualitative sample, 22 participants were interviewed (20 nurse leaders and two healthcare leaders), 11 from each cohort.

3.3. Pre-post changes

Table 4 presents the quantitative data and the means and standard deviations for each of the outcome variables. Results from paired

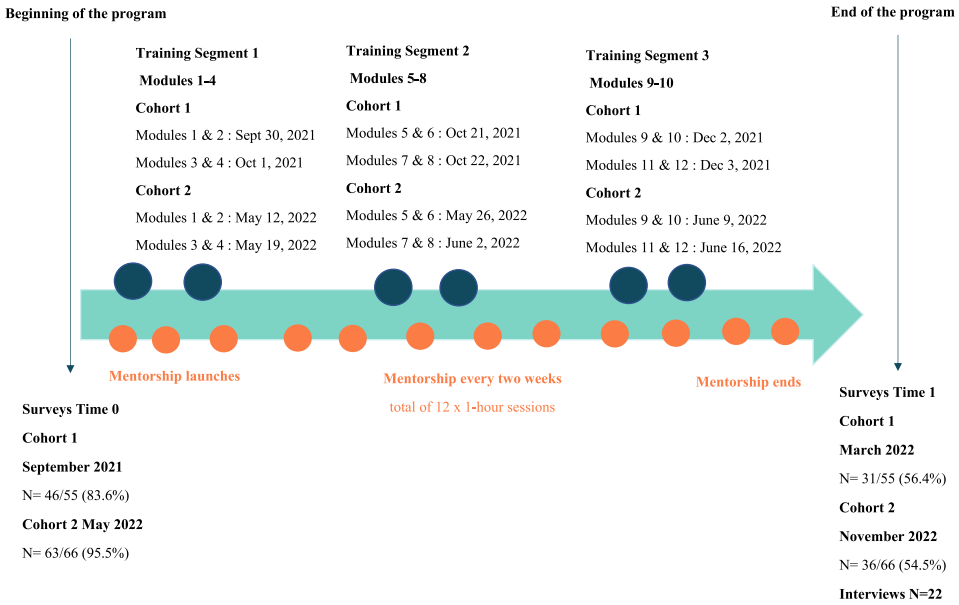

Fig. 1. Strengths-Based Nursing and Healthcare program timeline.

Table 3
Socio-demographic description of the final quantitative and qualitative samples.

Quantitative sample	$n = 50$	Qualitative sample	$n = 22$
Age	4.1 %	**Age**	4.5 %
25–29 years	22.4 %	Younger than 30	27.3 %
30–34 years	16.3 %	30–39 years	31.8 %
35–39 years	22.4 %	40–49 years	31.8 %
40–44 years	14.3 %	50–59 years	4.5 %
45–49 years	14.3 %	60 and older	
50–54 years	2.0 %		
55–59 years	4.1 %		
60+ years			
Job title	28 %	**Job title**	27.3 %
Nurse manager	8 %	Nurse & assistant nurse manager	18.2 %
Assistant head nurse	18 %	Nurse consultant-coordinator	13.6 %
Advanced practice nursing roles	12 %	Clinical nurse specialist	13.6 %
Nurse consultant-coordinator	12 %	Nurse practitioners	9.1 %
Nurse educators	8 %	Quality improvement nurse leader	9.1 %
Nurse	4 %	Project management nurse	9.1 %
Quality improvement leader	10 %	Healthcare leader	
Unknown			
Years of experience as a manager in the health care sector	40.8 %		
None	24.5 %		
3 years or less	14.3 %		
4–5 years	8.2 %		
6–10 years	6.1 %		
11–15 years	4.1 %		
16–25 years	2.0 %		
26–30 years			

n: sample size.

sample *t*-tests indicate significantly higher scores post-program compared to pre-program on the Strengths-Based Nursing and Healthcare Leadership measure, as well as on the leadership self-efficacy, leadership capabilities, and work satisfaction measures. Finally, results also indicate a significant reduction in stress post-program.

3.4. Experience and perceived effectiveness of the Strengths-Based Nursing and Healthcare Leadership program

Three themes emerged from the qualitative data analysis: 1) focus on people's strengths, 2) structure and language based on Strengths-Based Nursing and Healthcare Leadership values, and 3) building a support network.

3.5. Focus on people's strengths

All participants appreciated having a leadership program based on people's strengths and not on performance. Participants noted that this focus promoted a better sense of wellness and encouraged the adoption of a growth mindset.

I think just by nature of the philosophy of Strengths-Based Nursing and Healthcare, yeah. I think that shifts, that mindset, that positivity, the search for strengths, the positivity, it brings a difference to your work. Being your true self, being vulnerable in a leadership role and I think that can only serve to translate into an overall sense of wellness because I am sure it changes the way you approach people and your job and the challenges (Leader-6).

… it made me more aware of what you're doing, like having a growth mindset… in the workplace, right now, it's so stressful… when you have that Strengths-Based Nursing and Healthcare Leadership value, and you, you tend to understand, you know, maybe down there at the Emerge or in that administrative level, there's a story behind. So, once you - you know, once you see the big picture, not only the problem itself your energy changes… So, I think when you have a positive energy toward a problem, your colleagues will absorb, and it will just be a - you know, an

Table 4
Results of the paired-sample *t*-tests.

	Sample size	Time 0 Pre-program Mean (SD)	Time 1 Post-program Mean (SD)	Paired-sample *t*-tests	95 % Confidence Interval, *p*-value
SBNH-L	50	4.76 (0.48)	5..11 (0.46)	$t(49) = -6.02$	-0.46; -0.23; $p < 0.001$
Leadership self-efficacy	49	3.86 (0.46)	4.18 (0.48)	$t(48) = -5.07$	-0.44; -0.19; $p < 0.001$
Leadership capabilities	50	3.95 (0.44)	4.16 (0.41)	$t(49) = -5.38$	-0.30; -0.14; $p < 0.001$
Work satisfaction	48	3.52 (0.66)	3.74 (0.70)	$t(47) = -2.61$	-0.39; -0.05; $p = 0.012$
Stress	49	19.24 (5.63)	17.51 (5.05)	$t(48) = 2.71$	0.45; 3.02; $p = 0.009$

SBNH-L: Strengths-Based Nursing and Healthcare Leadership; *SD*: standard deviation.

uneventful day. (Leader-8).

… thinking about Strengths Based, within the people you work with, or you manage, I think the application of the principles that way is very beneficial… And trying to like focus on people's strengths and really, like, build up people and, and share the good things that they do. I think, if we can get leaders to act and think that way, then that will create a better environment for everyone (Leader-2).

3.6. Structure and language based on Strengths-Based Nursing and Healthcare Leadership values

Most participants mentioned having acquired a new language that allows them to better understand and communicate Strengths-Based Nursing and Healthcare Leadership values and to have more structured reflections around them. These values structure and frame a more open, collaborative, and inclusive philosophy of practice which promotes more respectful and harmonious exchanges with others.

When I am by myself, I have moments when I am unsure. I have uncertainties as well. However, I think the program has given me the guidance to… plan, to prepare myself, to be knowledgeable about what I'm saying. And then, explain to my team what it is that I wanted to say (Leader11).

3.7. Building a support network

Participants also mentioned the importance of the sharing and the support received during the program. Having participants from multiple organizations brought a wealth of perspectives. Being involved in the program allowed participants to establish a support network and helped break feelings of isolation.

… I met a lot of people. all types of professionals. To hear their different scenarios, different things they experienced, or that we also worked together on a scenario. For me these are experiences that will stay with me. To have also heard from different professionals, such as the instructors who gave the courses. That too will stay with me. They also sometimes shared personal stories … These are all things that were interesting and that bring back the humanity and the importance of having this humanity (Leader -2).

I absolutely would recommend the program because I think it does help develop your leadership… from an organization perspective I think they should all be offering it because more people who do it - I think it'll take on a momentum, I think right? Like you can't have isolated people doing it, but the more you offer it the more people who do it…it will breathe into a collective organization attitude rather than just a one-person attitude… And then it just becomes part of I think, the culture, right?… and I think it might really help deal with those tough situations, right? … I think it will add a layer of resilience (Leader-5).

4. Discussion

The main purpose of the present study was to document the Strengths-Based Nursing and Healthcare Leadership program designed to build the leadership competencies of nurse and healthcare leaders, and specifically to help leaders develop the knowledge and skills required to create a strengths-based culture. A longitudinal mixed methods design was used to determine the quantitative impact of the leadership training on nurse and healthcare leaders' leadership competencies as well as on their psychological health and to qualitatively explore how they experienced the program. The use of a concurrent mixed-methods design helped better explore participants' experience. Overall, the program was found to be successful in increasing leaders' Strengths-Based Nursing and Healthcare Leadership competencies indicators, leadership self-efficacy, and leadership capabilities, as well as in increasing their work satisfaction and reducing their perceived stress. Furthermore, participants revealed, through the semi-structured interviews, how the leadership program was unique and how it helped develop the competencies indicators measured in the quantitative component of the research as well as how it helped improve work-related psychological outcomes. Specifically, the program facilitated a change of mindset towards a greater focus on strengths and growth, it provided them with new language focused on the Strengths-Based Nursing and Healthcare core values, and created a support system by breaking down the silos between participants from different organizations and with different perspectives. These findings led to a number of implications that are discussed below.

First, one important finding from the present study was that the leadership training proposed was not only effective in improving nurse and healthcare leaders' leadership competencies, but it also greatly reduced their stress levels. The quantitative results showed a significant reduction in the stress experienced by participants as measured by the widely-used and validated perceived stress scale (Cohen and Williamson, 1988). Because the perceived stress scale is not a diagnostic instrument, there are no clinical cut-off scores. However, scores can be compared to large normative averages from previous studies. Scores can range from 0 to 40, with higher scores indicating higher levels of stress. The original average perceived stress scale score, reported by Cohen and Williamson (1988) with a sample of 2355 adults, was 13.02 ($SD = 6.35$). In a large sample of Swedish adults (Nordin and Nordin, 2013), the mean score for women was 14.56 ($SD = 6.59$) and 13.20 ($SD = 5.95$) for men. As a comparison, a large international adult sample surveyed during the first wave of COVID-19 reported mean perceived stress scale scores of 19.08 ($SD = 7.17$) (Adamson et al., 2020), and a large sample of adults from Alberta (Canada, $n = 7577$), also surveyed during the first 6 weeks of the pandemic, presented average scores of 20.80 (SD = 6.80) (Nkire et al., 2022). In light of these comparison points, we can say that the stress levels of our participants at Time 0 (mean = 19.24, $SD = 5.63$) was high and similar to that observed in the general population during the pandemic, but the reduction observed at Time 1 (mean = 17.51, $SD = 5.05$), when nurse leaders were still coping with COVID-19, was significant and was getting closer to pre-pandemic levels. In Canada, COVID-19 deaths have been gradually decreasing only since January 2023. In Quebec, masks remained mandatory in healthcare facilities, including hospitals and medical clinics, until April 7, 2023 (Government of Canada, 2023). Even in these difficult conditions, participants in the qualitative interviews highlighted how the program facilitated an

increased positivity and sense of wellness, which undoubtedly helped reduce their stress levels measured quantitatively.

Few interventions targeting the leadership competencies of nurse leaders have been found to assess and report on the impact the interventions have on leaders' stress levels and overall psychological functioning. A recent German study of 93 middle management leaders from a tertiary hospital, which evaluated the impact of a stress-preventive leadership intervention, reported improvements in well-being (Stuber et al., 2022). An intervention study focusing on servant leadership offered to 42 senior nursing managers in one acute general hospital in Hong Kong (Luk, 2018) suggested improvements in work-related well-being and work satisfaction. However, a recent review suggested that, although not negatively impactful, the few existing leadership interventions show conflicting results regarding their impact on the mental health of health leaders and their staff, with some showing improvements and some showing no impact (Stuber et al., 2021). The present study suggests that the leadership program is impactful and leads to positive outcomes.

Second, the leadership program offers an approach grounded in a care philosophy and values accessible to nurses and healthcare professionals that we argue help leaders manage situations and solve challenges in meaningful ways. Kilpatrick (2009) suggested that humanistic healthcare leaders, leaders who establish work environments that are positive, supportive, and empowering, are critical for mobilizing employees and creating thriving healthcare organizations. The qualitative interviews of the present study brought to light the tangible usefulness of the Strengths-Based Nursing and Healthcare Leadership values to frame and structure an open, collaborative, and inclusive work environment. While Chen et al. (2022) recent review concluded that many nurse leaders face difficulties applying the leadership competencies they acquire through intervention and training, we argue that this is not the case for Strengths-Based Nursing and Healthcare leaders. The Strengths-Based Nursing and Healthcare Leadership values are person-centred rather than performance-centred, an aspect that deeply resonated with the participating nurses and healthcare leaders. This is in line with recent evidence linking nurse leaders' display of humanistic care behaviours and nurse followers' sense of professional identity and psychological security (Wang et al., 2023).

Furthermore, the unique aspect of the Strengths-Based Nursing and Healthcare Leadership values and philosophy is that it aligns with the Strengths-Based Nursing and Healthcare model of patient care. This is noteworthy as it is possible that when nurses observe and benefit from their leader's way of being and doing (i.e.., from their example), they are themselves encouraged to care for their patients in a similar manner, guided by Strengths-Based Nursing and Healthcare values. Future research should thus investigate this congruence between leaders and nursing staff's embodiment of the Strengths-Based Nursing and Healthcare values and how the approach to leadership translates into patient care. In other words, are Strength-Based Nursing and Healthcare leaders more likely to promote Strengths-Based Nursing and Healthcare patient care.

Third, our results suggest that multi-site leadership interventions offer additional advantages for leaders, as the participants in the present leadership program highlighted the significance of bringing leaders from multiple organizations and provinces together to learn and grow. We further argue that this dimension of the program may have contributed to increasing participants' work satisfaction, as found in the quantitative results. Nursing and healthcare leadership has been found to be a highly demanding and isolating role that benefits from support networks, coaching, and mentoring (e.g., Cabral et al., 2019; Solbakken et al., 2018). We thus call for more multi-site leadership interventions or training programs to break the isolation experienced by nurse and healthcare leaders.

We found a number of implications for clinical practice, research, and policy makers. First, as mentioned by WHO Global Strategic Directions for Nursing and Midwifery 2021–2025 (WHO, 2021), investing in the development of nurses' leadership competencies is a top policy priority. The present study reinforces the importance of working with educational, research, and healthcare organizations to establish leadership development programs and mentorship opportunities. Second, we demonstrated the importance and relevance of shifting from a problem-deficit model that demotivates nurses to a strengths-based approach which can transform and humanize our healthcare environments (Gottlieb, 2013). Finally, the COVID-19 pandemic offered new methods of delivering in-person training and mentorship programs. This study demonstrated the acceptability, feasibility, and impact of delivering an online leadership program with small group mentoring in several organizations in two provinces.

5. Strengths and limitations

The present study used a concurrent mixed-methods pre-post design to assess the effectiveness of the leadership program. Although the mixed-methods design is a significant strength of the present study, future research would benefit from an experimental design. Indeed, even though outcomes were measured before and after the training program, thus giving us confidence that completing the program caused the significant changes we observed, an experimental design with random assignment of participants would further strengthen these causal conclusions by eliminating other potential explanations. Given the context, however, these designs are very challenging to implement. All quantitative measures were self-reported by program participants. It would be interesting to assess the perspective of the employees who work under the leaders involved in the program to determine the actual impact of the program. Furthermore, organizational indicators of care and performance would provide interesting insights into how far the program reaches. The sample size was small, and the program was developed and evaluated only in Canada. Future research should include a larger sample of participants and an evaluation of the program's applicability in other geographical locations. Finaly, most of the sample either had no (40.8 %) or very little (3 years or less, 24.5 %) experience as managers in the health care sector. This result may have skewed the Time 1 score on the higher side for stress levels and to the lower side for leadership capabilities and self-efficacy. It would be interesting for future research to determine, for instance, if less experienced and potentially younger, nurse and healthcare leaders are more likely to integrate a strengths-based leadership approach to their practice as they are learning a new role.

One noteworthy strength of the present program lies in its structure and nature. Specifically, the program integrates different components to reinforce learning and to make theoretical concepts relevant and salient by connecting them to personal and practice

experiences through story sharing and mentorship. The leadership program uses a pedagogical approach of story-sharing and mentorship facilitates active and engaged learning. This integration of the three components (story-sharing, modules, and mentorship) may explain why the present results support the effectiveness of this program. Each component reinforces and advances understanding Strengths-Based Nursing and Healthcare Leadership as theoretical ideas inform ways of practicing and experience in practice informs and deepens understanding of Strengths-Based Nursing and Healthcare Leadership. This potential explanation for the effectiveness of the program is in line with Chen et al. (2022) recent review, which highlighted the benefit of integrating different components into an intervention program.

6. Conclusion

In sum, in this study, we demonstrated the positive impact of a 6-month Strengths-Based Nursing and Healthcare Leadership program. We suggest that the results from the quantitative surveys and the qualitative semi-structured interviews demonstrate that the leadership program helped improve the leadership competencies, well-being, and work satisfaction of participating nurses and healthcare leaders. This approach will help leaders create an equitable and culturally-safe work environment that honours, develops, mobilizes, and capitalizes on the strengths of individuals and their teams for the ultimate benefit of staff and patients.

CRediT authorship contribution statement

Mélanie Lavoie-Tremblay: . **Kathleen Boies:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Conceptualization. **Christina Clausen:** Writing – review & editing, Methodology, Conceptualization. **Julie Frechette:** . **Kimberley Manning:** Writing – review & editing, Methodology, Conceptualization. **Christina Gelsomini:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Conceptualization. **Guylaine Cyr:** Writing – review & editing, Methodology, Investigation, Formal analysis. **Geneviève Lavigne:** Writing – review & editing, Methodology, Investigation, Formal analysis. **Bruce Gottlieb:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Conceptualization. **Laurie N. Gottlieb:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding

The Strengths-Based Nursing and Healthcare Leadership Program was supported by the Social Sciences and Humanities Research Council of Canada and the Canadian Institutes of Health Research (PWP - 159070). The funding source was not involved in the research and in the preparation of the article.

CRediT authorship contribution statement

All authors of this study meet at least one of the authorship criteria of ICMJE (http://www.icmje.org/icmje-recom menda tions.pdf) and have agreed on the final version.

Acknowledgments

The authors thank all the study participants for their time and all the collaborators involved in this program.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.ijnsa.2024.100184.

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